RECLAMATION

Managing Water in the West

Draft Environmental Assessment

Arvin-Edison Water Storage District / Improvement District #4 Exchange-Facilitated Transfer 2010

EA-09-90

U.S. Department of the Interior
Bureau of Reclamation
Mid Pacific Region
South Central California Area Office
Fresno, California

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Mission Statements

The mission of the Department of the Interior is to protect and provide access to our Nation's natural and cultural heritage and honor our trust responsibilities to Indian Tribes and our commitments to island communities.

The mission of the Bureau of Reclamation is to manage, develop, and protect water and related resources in an environmentally and economically sound manner in the interest of the American public.

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List of Acronyms and Abbreviations

AEWSD	Arvin-Edison Water Storage District
AF	acre-feet
APE	area of potential effects
CAA	Clean Air Act
cfs	cubic-feet per second
CO	carbon monoxide
Corps	U.S. Army Corps of Engineers
CVC	Cross Valley Canal
CVP	Central Valley Project
CWA	Clean Water Act
DWR	Department of Water Resources
EA	Environmental Assessment
ESA	Endangered Species Act
FKC	Friant-Kern Canal
FWCA	Fish and Wildlife Coordination Act
ID4	Improvement District #4 of Kern County Water Agency
ITA	Indian Trust Assets
KCWA	Kern County Water Agency
MBTA	Migratory Bird Treaty Act
NHPA	National Historic Preservation Act
NO_x	nitrous oxides
NRHP	National Register of Historic Places
PM_{10}	particulate matter with a diameter of less than 10 microns
Reclamation	U.S. Bureau of Reclamation
SIP	State Implementation Plan
SJVAB	San Joaquin Valley Air Board
SJVAPCD	San Joaquin Valley Air Pollution Control District
State	State of California
SWP	State Water Project
TDS	total dissolved solids
U.S.	United States
USFWS	U.S. Fish and Wildlife Service
VOC	volatile organic compounds

Section 1 Purpose and Need for Action

1.1 Background

The State of California (State) has historically experienced periods of drought and flooding. Water agencies continually strive to prepare for varying water supply conditions to the extent possible so that agricultural or urban water supply needs can be met regardless of the water availability conditions. This could be achieved by having a variety of water supply options that can be implemented as needed. The ability to move water supplies from an area of greater supply to an area of lesser supply is one strategy that can be useful.

In 2005, the Kern County Water Agency (KCWA) Improvement District #4 (ID4) had surplus State Water Project (SWP) supplies and Arvin-Edison Water Storage District (AEWSD), a Central Valley Project (CVP) contractor, was operating its groundwater extraction wells during a deficit water supply year. Subsequently, ID4 and AEWSD entered into an exchange program where ID4 delivered 10,000 acre-feet (AF) of its SWP supply to AEWSD in 2005 and AEWSD agreed to return a like amount of water to ID4 at a later time.

Currently, the State is experiencing unprecedented water management challenges during the current and extended dry hydrology, which is now in its third consecutive year. The SWP is forecasting very low storage conditions in all major reservoirs. As a result, the SWP has declared only 40 percent allocation of their Table A supplies to their contractors for the 2009 contract year (March 1, 2009 through February 28, 2010) and has recently forecasted a 5 percent allocation for the 2010 contract year. In order to offset any effects due to its reduced SWP supply, ID4 is pursuing any available supplemental water supplies and has requested that AEWSD fulfill its obligation under their 2005 exchange program.

1.2 Purpose and Need

ID4 needs to supplement its SWP supply in order to meet its service area demands during a dry hydrological year in 2009 and in anticipated similar conditions in 2010. AEWSD's purpose is to fulfill an obligation under a previous agreement by delivering a portion of its CVP water to ID4.

1.3 Scope

The Bureau of Reclamation (Reclamation) is preparing this Environmental Assessment (EA) to examine the potential impacts of approving an exchange-facilitated transfer involving the delivery of 10,000 AF of AEWSD's CVP water to ID4. Both districts are located in the southern San Joaquin Valley, in Kern County, California (Figure 1).

The Proposed Action would occur during the remainder of the 2010 calendar year; therefore, this will be the temporal scope of the Proposed Action.

1.4 Potential Issues

This EA will analyze the affected environment of the Proposed Action in order to determine the potential and cumulative impacts to the following resources:

- Water Resources
    - Global Climate Change
    - Surface Water Resources
    - Groundwater Resources
    - Water Quality
    - Conveyance Facilities and Rivers
- Biological Resources
- Land Use
- Cultural Resources
- Indian Trust Assets (ITA)
- Socioeconomics
- Environmental Justice
- Air Quality

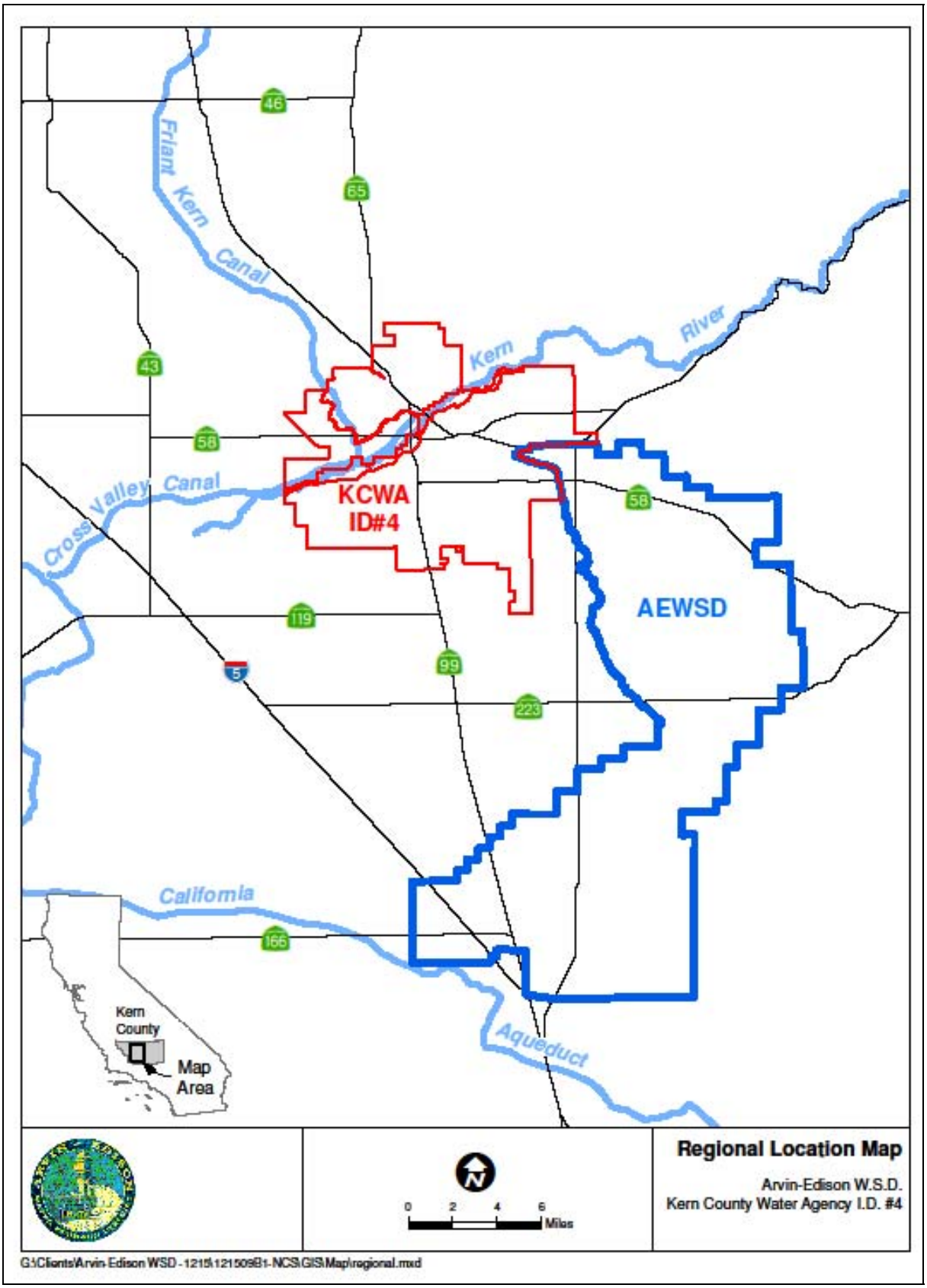

Figure 1 – Project and Regional Location Map

Section 2 Alternatives Including Proposed Action

This EA considers two possible actions: the No Action Alternative and the Proposed Action. The No Action Alternative reflects future conditions over the temporal scope without the Proposed Action and serves as a basis of comparison for determining potential effects to the human environment.

2.1 No Action Alternative

Under the No Action Alternative, Reclamation would not approve the exchange-facilitated transfer. AEWSD would retain their CVP supplies and use it as allowed under its contract with Reclamation and ID4 would look for other sources of water to supplement its SWP supply. AEWSD would continue to pursue other sources of water to deliver to ID4; however, other sources have yet to be identified, is speculative at this point, and outside the scope of this EA.

2.2 Proposed Action

Under the Proposed Action, Reclamation would approve the exchange-facilitated transfer which would allow AEWSD to deliver 10,000 AF of its Class 1, Class 2 and/or 215 Water (when available) to ID4. The Proposed Action would occur during the remainder of the 2010 calendar year. As AEWSD's CVP water supplies, needs, and obligations develop, the actual delivery amount would be better defined but would not exceed the maximum quantity of 10,000 AF. The CVP water would be delivered from Millerton Lake Reservoir into the Friant-Kern Canal (FKC) and conveyed towards the FKC terminus near milepost 151.80. From there, the CVP water could be diverted into the Cross Valley Canal (CVC) via existing turnouts/interties for ultimate delivery to ID4. In addition, the CVP water could be released into the Kern River channel at the FKC terminus where ID4 could then divert the water into its internal distribution system. No other CVP facilities would be utilized in the delivery of this water.

The Proposed Action would be subject to the following conditions:

- no new construction or modifications of any water diversion or conveyance facilities would be allowed;
- there would be no introduction of non-CVP water into CVP facilities;
- all necessary agreements for use of the FKC, FKC/CVC Intertie, AEWSD Intake Canal/CVC Intertie, CVC, and the Kern River are required before each facility is utilized;
- all transfers and exchanges involving CVP water must comply with all applicable federal, state and local laws, regulations, permits, guidelines and policies.
- all transfers and exchanges involving CVP water cannot alter the flow regime of natural waterways or natural watercourses such as rivers, streams, creeks, ponds, pools, wetlands, etc., so as to have a detrimental effect on fish or wildlife or their habitats; and
- ID4 would use the CVP water for groundwater recharge, municipal, industrial and/or drinking water purposes within their service area and approved places of use.

Section 3 Affected Environment & Environmental Consequences

This section identifies the potentially affected environment and the environmental consequences involved with the Proposed Action and the No Action Alternative, in addition to environmental trends and conditions that currently exist.

3.1 Water Resources

Climate change is an environmental trend and for the purpose of this EA refers to changes in global or regional climate over time and is expected to have some effect on the snow pack of the Sierra Nevada and the run-off regime. Current data are not yet clear on the hydrologic changes and how they would affect the Friant Division of the CVP as well as other federal, state and local river operations within the action area. Water allocations are made dependent on hydrologic conditions and environmental requirements. Since operations and allocations are flexible, any changes in hydrologic conditions due to climate change would be within the respective operations' flexibility and therefore water resource changes due to climate change would be the same with or without the Proposed Action.

3.1.1 Affected Environment

Arvin-Edison Water Storage District

AEWSD has a long-term contract with Reclamation for CVP supplies from the Friant Division. The annual contract entitlement for the district is 40,000 AF Class 1 and 311,675 AF Class 2 CVP supplies dependent upon the particular year's hydrology. AEWSD's current facilities were primarily constructed in the 1960s and are based on the conjunctive use of surface water imported from the Friant Division of the CVP and groundwater resources that underlie most of the district. AEWSD owns extraction wells that it uses to supply previously banked water to farms within its service area when surface water supplies are deficient. Recharging and then extraction of groundwater adds costs to water deliveries related to power used for pumping and operation and maintenance of recharge facilities. To meet the needs of its customers, AEWSD tries to maximize the value of water delivered by providing water at the least cost to growers.

Water supplies in the State vary from abundant supplies during wet periods to extreme shortages during droughts. To regulate this variability in its supplies, AEWSD utilizes its stored groundwater and has also exchanged a portion of its wet-year supplies for dry-year water available from other agencies.

AEWSD has historically made available a portion of its Friant Division CVP water supply to other CVP contractors located on the eastside of the San Joaquin Valley in exchange for their CVP supplies from northern California, diverted and wheeled into and through the California Aqueduct for ultimate delivery to AEWSD. Due to a decrease in supply reliability, dramatic cost increases, and water quality concerns, several of these exchanges are no longer feasible. As a result, it has been necessary for AEWSD to identify and implement other measures to manage its highly variable CVP water supplies.

Improvement District #4

KCWA has a master contract with the State Department of Water Resources (DWR) for SWP supplies individually contracted to ID4 and 13 local water districts, referred to as its member units. ID4's primary source of surface water is through this SWP contract, which has an annual entitlement of up to 77,000 AF for municipal and industrial purposes. In addition, ID4 receives an annual entitlement of up to 5,946 AF of SWP water for agricultural purposes. From time to time, ID4 also receives Article 21 water from the SWP, 215 Water from the CVP, and Kern River supplies as supplemental water to its SWP supplies.

The importation of the surface water supply from the SWP to ID4 serves to provide a supplemental water supply for portions of the metropolitan Bakersfield. The imported supply is delivered directly to recharge areas for direct replenishment of the underlying groundwater aquifer or to the Henry C. Garnett Water Purification Plant for treatment and delivery to in-district water purveyors. ID4 also has an extensive groundwater monitoring and reporting program to track its progress in replenishment of the groundwater basin.

Groundwater Resources

The project area overlies the Kern County Groundwater Subbasin of the San Joaquin Valley Basin, and which is confined within the Tulare Lake Hydrologic Region. A review of the subbasin indicate that except for seasonal variation resulting from recharge and pumping, the groundwater levels have remained relatively unchanged from 1970 to 2000 (DWR, 2006). However, the Kern County Groundwater Subbasin has been identified by DWR as being critically over-drafted. By definition, "a basin is subject to critical conditions of overdraft when continuation of present water management practices would probably result in significant adverse overdraft-related environmental, social, or economical impacts (Reclamation, 2006)."

Natural recharge is primarily from stream seepage along the eastern subbasin and the Kern River; however, recharge of applied irrigation water is the largest contributor (DWR, 2006). In addition to other water providers in Kern County, AEWSD adopted an AB3030 Groundwater Management Plan in 2003 and ID4 adopted the AB3030 Groundwater Management Plan in 2004 and an Urban Water Management Plan in 2005 to help offset overdraft conditions in the county. Both AEWSD and ID4 are currently, with numerous other Kern County districts and public agencies, developing an Integrated Regional Water Management Plan.

Water Quality

In general, Friant Division CVP water quality is of one of the highest qualities in the State. SWP water is typically of lower quality than CVP water from the Friant Division and groundwater in certain constituents, including but not limited to total dissolved solids (TDS), bicarbonates, chlorides, sodium, and boron. The Kern River exhibits mineral quality that is excellent in all respects, with TDS concentration averaging about 100 milligrams per liter. The quality of the CVP water conveyed in the FKC is equal to or better than the quality of the Kern River. Water quality data for the FKC indicates an average TDS of 45 milligrams per liter for the period 1957 to 2000. Records indicate that there has not been much fluctuation in the quality of Kern River and FKC supplies.

In addition, groundwater quality throughout the region is suitable for most urban and agricultural uses with only local impairments. The primary constituents of concern are high TDS, nitrate, arsenic, and organic compounds (DWR 2006).

Conveyance Facilities and Rivers

Cross Valley Canal The CVC, a locally-financed facility completed n 1975, extends from the California Aqueduct near Tupman to Bakersfield. It consists of four reaches which have capacities ranging from 890 cubic-feet per second (cfs) through the first two pumping plants to 342 cfs in the unlined extension near Bakersfield. The CVC is a joint-use facility operated by the KCWA that could convey water from the Aqueduct to the CVC, and then to the Kern Water Bank, the City of Bakersfield, the Berrenda Mesa Property, the Kern River channel, the Pioneer Banking project or to the various member units of KCWA. The CVC is also capable of conveying water to the Aqueduct.

In 2008, as part of the CVC expansion project, an additional 500 cfs turnout was constructed from the FKC that can deliver water by gravity into either the AEWSD Intake Canal or the CVC. The FKC/CVC Intertie is also capable of moving water from the CVC to the FKC via pumping.

Friant-Kern Canal The FKC carries water over 151.8 miles in a southerly direction from Friant Dam to its terminus at the Kern River, four miles west of Bakersfield. The FKC has an initial capacity of 5,000 cfs that gradually decreases to 2,000 cfs at its terminus in the Kern River (Reclamation, 2010). The water conveyed in the FKC is from the San Joaquin River and is considered to be of good quality because it originates from the Sierra Nevada. The water is used for municipal and industrial, and agricultural purposes in Fresno, Tulare, and Kern Counties. The FKC is a part of the CVP, which annually delivers about seven million AF of water for agricultural, urban, and wildlife use.

Kern River The Kern River is about 165 miles long and is the southernmost river in the San Joaquin Valley. The river originates from the Sierra Nevada Mountains on the eastern side of Tulare County and terminates on the west side of Kern County where it is mainly diverted for local water supplies. When the Kern River enters Kern County, it deposits into Lake Isabella which was created as a result of Isabella Dam. Below the dam, the river is highly diverted through a series of canals to irrigate farms in the southern San Joaquin Valley and provide municipal water supplies to the City of Bakersfield and surrounding areas. The Kern River is one of the few rivers in the Central Valley which does not contribute water to the CVP; however, the FKC terminates into the river approximately four miles west of downtown Bakersfield.

3.1.2 Environmental Consequences

No Action Alternative

Under the No Action Alternative, Reclamation would not approve the exchange-facilitated transfer. AEWSD would retain their CVP supplies and use it as allowed under its contract with Reclamation and ID4 would look for other sources of water to supplement its SWP supply. AEWSD would continue to pursue other sources of water to deliver to ID4; however, other sources have yet to be identified, is speculative at this point, and outside the scope of this EA.

There would be no impacts to the conveyance facilities or the Kern River listed in the affected environment as conditions would remain the same. The groundwater level and quality immediately below ID4 may not benefit from the possible recharge of CVP water.

Proposed Action

Under the Proposed Action AEWSD would still have sufficient water supplies to meet their in-district water demands. CVP supplies made available for delivery to ID4 would be surplus to AEWSD's immediate operational needs. This could be due to unanticipated short-term allocations such as the declaration of "uncontrolled season" where Class 2 Friant Division CVP water is available in large amounts for a limited amount of time to all Class 2 contractors. Declarations such as this can provide the water needed for the delivery or be used to meet AEWSD's immediate irrigation demand freeing up schedulable water supplies for exchange. During uncontrolled season, AEWSD imports all the water their system is capable of transporting; consequently, the Proposed Action would not allow AEWSD to make use of more CVP water than they have the capacity to divert and recharge, such as the CVP water available during an uncontrolled season.

ID4 would use the water within its service area for groundwater recharge, municipal, industrial and/or drinking water purposes within its service area and approved places of use. If left in the groundwater subbasin, the aquifer immediately below ID4 would slightly benefit from the introduction of additional and better quality water.

The delivery of CVP water to ID4 would occur entirely within existing conveyance facilities and the Kern River, which would not be adversely impacted as the exchanged water must be scheduled and approved by Reclamation, KCWA, and the Kern River watermaster. The normal operations of the conveyance facilities and obligations by the overseeing agency to deliver water to its contractors would not be impacted. No natural streams or water courses would be affected since no additional pumping or diversion would occur; therefore, no adverse impacts would result from the implementation of the Proposed Action.

3.2 Biological Resources

3.2.1 Affected Environment

The following list (Table 1) was obtained on January 21, 2010 (Document # 100121115530), by accessing the U.S. Fish and Wildlife Service (USFWS) Database: http://www.fws.gov/sacramento/es/spp_list.htm. The list is for the following United States Geological Survey quadrangles, which overlapped the AEWSD and ID4 boundaries: Bear Mountain, Arvin, Weed Patch, Mettler, Tejon Hills, Coal Oil Canyon, Bena, Rio Bravo Ranch, Oil Center, Lamont, Edison, Oildale, Rosedale, Stevens, and Gosford.

Table 1. Sensitive Species That May Occur in Project Site

Species	***Status[1]***	***Effects[2]***	***Occurrence in the Study Area[3]***
Amphibians			
California red-legged frog (*Rana aurora draytonii*)	T	NE	**Absent**. No individuals or habitat in area of effect.
Birds			

California condor (*Gymnogyps californianus*)	E	NE	**Absent**. No individuals or habitat in area of effect.
Burrowing owl (*Athene cunicularia*)	MBTA	NE	**Present**. CNDDB[4] records indicate this species occurs in the project area. No new construction, land use changes, or modification of existing facilities.
southwestern willow flycatcher *Empidonax traillii extimus*	E	NE	**Absent**. No individuals or habitat in area of effect.
Fish			
Delta smelt (*Hypomesus transpacificus*)	T	NE	**Absent**. No natural waterways within the species' range will be affected by the proposed action.
Invertebrates			
Valley elderberry longhorn beetle (*Desmocerus californicus dimorphus*)	T	NE	**Absent**. No individuals or habitat in area of effect.
Vernal pool fairy shrimp (*Branchinecta lynchi*)	T	NE	**Absent**. No individuals or habitat in area of effect.
Mammals			
Buena Vista Lake shrew *Sorex ornatus relictus*	E, X	NE	**Absent**. No individuals or habitat in area of effect.
giant kangaroo rat (*Dipodomys ingens*)	E	NE	**Absent**. No individuals or habitat in area of effect.
Tipton kangaroo rat *Dipodomys nitratoides nitratoides*	E	NE	**Present**. CNDDB records indicate this species occurs in the project area. No construction of new facilities; no conversion of lands from existing uses.
San Joaquin kit fox (*Vulpes mactotis mutica*)	E	NE	**Present**. CNDDB records indicate this species occurs in the project area. No construction of new facilities; no conversion of lands from existing uses.
Plant			
Bakersfield cactus (*Opuntia treleasei*)	E	NE	**Present**. CNDDB records indicate this species occurs in the project area. No construction of new facilities; no conversion of lands from existing uses.
California jewelflower (Caulanthus californicus)	E	NE	**Absent**. No individuals or habitat in area of effect.
San Joaquin adobe sunburst (*Pseudobahia peirsonii*)	T	NE	**Absent**. No individuals or habitat in area of effect.
San Joaquin woolly-threads (*Monolopia congdonii*)	E	NE	**Absent**. Believed to be extirpated and habitat is not present in area
Reptiles			
Blunt-nosed leopard lizard (*Gambelia sila*)	E	NE	**Present**. Documented as extant along north eastern border of KCWA ID4. No construction of new facilities; no conversion of lands from existing uses
Giant garter snake (*Thamnophis gigas*)	T	NE	**Absent**. No individuals documented in this area.

1 Status= Listing of Federally special status species
E: Listed as Endangered.
T: Listed as Threatened.
MBTA: Those species protected by the Migratory Bird Treaty Act.
X: Critical Habitat designated for this species.
2 Effects = NE = No Effect determination.
3 Definition Of Occurrence Indicators
Present: Species observed in area
Absent: Species not observed in study area and habitat requirements not met.
4 CNDDB = California Natural Diversity Database 2010

Special-Status Species

With the conversion of much of the San Joaquin Valley floor to agriculture, suitable habitat for special-status species is scarce. A number of animals that have federally-protected status as endangered or threatened potentially occur in the general area. These include blunt-nosed leopard lizard, Western burrowing owl, Tipton kangaroo rat, and the San Joaquin kit fox (Table 1).

3.2.2 Environmental Consequences

No Action Alternative

Under the No Action Alternative, there would be no impacts to biological resources since conditions would remain the same as existing conditions.

Proposed Action

Effects are similar to the No Action Alternative. Most of the habitat types required by species protected by the Endangered Species Act (ESA) do not occur in the project area. The Proposed Action would not involve the conversion of any land fallowed and untilled for three or more years. The Proposed Action also would not change the land use patterns of the cultivated or fallowed fields that do have some value to listed species of birds protected by the Migratory Bird Treaty Act (MBTA). Since no natural stream courses or additional pumping would occur, there would be no effects on listed fish species. No critical habitat occurs within the area affected by the Proposed Action and so none of the primary constituent elements of any critical habitat would be affected.

3.3 Land Use

3.3.1 Affected Environment

Arvin-Edison Water Storage District

AEWSD includes the City of Arvin and is located in the proximity of the unincorporated communities of Edison, Lamont, Mettler, and DiGiorgio. The vast majority of farmland in the Arvin-Edison service area is classified as Irrigated Farmland by the California Department of Conservation (DOC 2010). The second main farmland classification in the service area is Non-irrigated Farmland.

Agriculture, in the form of row crops, orchards and vineyards, is the primary land use in the region. The Kern County General Plan designates most areas within the AEWSD service area as "intensive agriculture." Supplemental irrigation is required for these activities as the area receives an average of only 8.5 inches of rainfall per year. Other agricultural uses, while not directly dependent on irrigation for production, are also consistent with the intensive agriculture designation. The minimum parcel size is 20 acres and permitted uses include, but are not limited to, irrigated cropland, orchards, vineyards, horse ranches, beekeeping, ranch and farm facilities, and related uses. One single-family dwelling unit is permitted per 20-acre parcel (KCPD 2007).

Improvement District #4

ID4, located within the City of Bakersfield, was formed to provide a supplemental water supply for portions of the metropolitan Bakersfield area through the importation of water from the SWP. The imported supply is delivered directly to recharge areas for direct replenishment of the underlying groundwater aquifer or to the Henry C. Garnett Water Purification Plant for treatment and delivery to in-district water purveyors. ID4 provides for mainly municipal and industrial use, and very little is dedicated to agriculture.

3.3.2 Environmental Consequences

No Action Alternative

Under the No Action Alternative, there would be no changes to existing land use conditions in either AEWSD or ID4 since conditions would remain the same.

Proposed Action

Under the Proposed Action, CVP supplies made available for delivery to ID4 would be surplus to AEWSD's immediate operational needs. The delivery of 10,000 AF of its CVP supplies would still leave AEWSD with sufficient water supplies to meet their in-district water demands, so farmers dependent on water for irrigation would not be impacted and land use conditions within AEWSD would remain the same.

ID4 intends to use the CVP water for either groundwater replenishment, municipal, industrial, and/or drinking water purposes. Ultimately, the CVP water would supplement ID4's SWP supply and would not generate any new housing nor would it result in new permanent population growth that would exceed official regional or local population projections in its service area. Therefore, the Proposed Action would not have any impacts on existing land use.

3.4 Cultural Resources

A cultural resource is a broad term that includes prehistoric, historic, architectural, and traditional cultural properties. The National Historic Preservation Act (NHPA) of 1966 is the primary Federal legislation that outlines the Federal Government's responsibility to cultural resources. Section 106 of the NHPA requires the Federal Government to take into consideration the effects of an undertaking on cultural resources listed on or eligible for inclusion in the National Register of Historic Places (NRHP). Those resources that are on or eligible for inclusion in the NRHP are referred to as historic properties.

The Section 106 process is outlined in the Federal regulations at 36 Code of Federal Regulations (CFR) Part 800. These regulations describe the process that the Federal agency (Reclamation) takes to identify cultural resources and the level of effect that the proposed undertaking will have on historic properties. In summary, Reclamation must first determine if the action is the type of action that has the potential to affect historic properties. If the action is the type of action to affect historic properties, Reclamation must identify the area of potential effects (APE), determine if historic properties are present within that APE, determine the effect that the undertaking would have on historic properties, and consult with the State Historic Preservation Office, to seek concurrence on Reclamation's findings. In addition, Reclamation is required through the Section 106 process to consult with Indian Tribes concerning the identification of sites of religious or cultural significance, and consult with individuals or groups who are entitled to be consulting parties or have requested to be consulting parties.

3.4.1 Affected Environment

The San Joaquin Valley is rich in historical and prehistoric cultural resources. Cultural resources in this area are generally prehistoric in nature and include remnants of native human populations that existed before European settlement. Prior to the 18th Century, many Native American tribes inhabited the Central Valley. It is possible that many cultural resources lie undiscovered across the valley. The San Joaquin Valley supported extensive populations of Native Americans, principally the Northern Valley Yokuts, in the prehistoric period. Cultural studies in the San Joaquin Valley have been limited. The conversion of land and intensive farming practices over the last century may have destroyed many Native American cultural sites.

3.4.2 Environmental Consequences

No Action Alternative

Under the No Action Alternative, there would be no impacts to cultural resources since there would be no modifications to existing conveyance systems and no new construction that would result in any ground disturbance. Conditions related to cultural resources would remain the same as exiting conditions.

Proposed Action

The Proposed Action is administrative in nature and is the type of activity that has no potential to affect historic properties pursuant to the regulations at 36 CFR Part 800.3(a)(1). There would be no modification of water conveyance facilities and no activities that would result in ground disturbance. Because there is no potential to affect historic properties, no cultural resources would be impacted as a result of implementing the Proposed Action.

3.5 Indian Trust Assets

ITA are legal interests in assets that are held in trust by the United States (U.S.) Government for federally recognized Indian tribes or individuals. The trust relationship usually stems from a treaty, executive order, or act of Congress. The Secretary of the Interior is the trustee for the U.S. on behalf of federally recognized Indian tribes. "Assets" are anything owned that holds monetary value. "Legal interests" means there is a property interest for which there is a legal remedy, such a compensation or injunction, if there is improper interference. ITA cannot be

sold, leased or otherwise alienated without the U.S.' approval. Assets can be real property, physical assets, or intangible property rights, such as a lease, or right to use something; which may include lands, minerals and natural resources in addition to hunting, fishing, and water rights. Indian reservations, rancherias, and public domain allotments are examples of lands that are often considered trust assets. In some cases, ITA may be located off trust land.

Reclamation shares the Indian trust responsibility with all other agencies of the Executive Branch to protect and maintain ITA reserved by or granted to Indian tribes, or Indian individuals by treaty, statute, or Executive Order.

3.5.1 Affected Environment

There are no ITAs, Indian Reservations, or public domain allotments found within the water districts involved, nor is there such a property interest in the lands designated to receive the water proposed in this action.

3.5.2 Environmental Consequences

No Action Alternative

Under the No Action Alternative, there are no impacts to ITA since conditions would remain the same as exiting conditions.

Proposed Action

There are no tribes possessing legal property interests held in trust by the U.S. in the water involved with this action, nor is there such a property interest in the lands designated to receive the water proposed in this action. There are no ITA, Indian Reservations, or public domain allotments found within the water districts involved. The Proposed would not affect or interfere with the observation of religious or other ceremonies associated with ITA.

Approval of the Proposed Action would not involve any construction or modifications and would utilize existing conveyance facilities; therefore, activities associated with the Proposed Action would not affect ITA.

3.6 Socioeconomic Resources

3.6.1 Affected Environment

The agricultural industry significantly contributes to the overall economic stability of the San Joaquin Valley. The CVP allocations each year allow farmers to plan for the types of crops to grow and to secure loans to purchase supplies. Depending upon the variable hydrological and economical conditions, water transfers and exchanges could be prompted. The economic variances may include fluctuating agricultural prices, insect infestation, changing hydrologic conditions, increased fuel and power costs.

3.6.2 Environmental Consequences

No Action Alternative
Under the No Action Alternative, AEWSD would retain its CVP water and continue to use the water as approved in its contract to maintain and operate its facilities as has historically occurred. ID4 would have to find other sources of water to supplement its SWP supplies in order to either recharge the groundwater subbasin and/or provide urban water uses to its customers. Socioeconomic conditions would not be impacted in the vicinities of AEWSD and ID4 since conditions would remain the same as existing conditions.

Proposed Action
The Proposed Action would result in a shift or reduction of energy use which would save AEWSD the energy and cost associated with otherwise pumping groundwater. AEWSD's ability to deliver 10,000 AF to ID4 still leaves the district with sufficient water supplies for its farmers, so agriculture-dependent business and jobs would not be impacted.

With additional water to supplement its SWP supply, conditions in ID4 would remain the same as existing conditions and there would be no impacts to socioeconomic resources.

3.7 Environmental Justice

Environmental justice refers to the fair treatment of peoples of all races, income levels, and cultures with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies. Fair treatment implies that no person or group of people should shoulder a disproportionate share of negative impacts resulting from the execution of Federal programs. Executive Order 12898, dated February 11, 1994, establishes the achievement of environmental justice as a Federal agency priority. The memorandum accompanying the order directs heads of departments and agencies to analyze the environmental effects of federal actions, including human health, economic, and social effects when required by National Environmental Policy Act, and to address significant and adverse effects on minority and low-income communities.

3.7.1 Affected Environment
The market for seasonal workers on local farms draws thousands of migrant workers, commonly of Hispanic origin from Mexico and Central America. Agriculture and related businesses are the main industry in region, which provides employment opportunities for these minority and/or disadvantaged populations. The areas around the districts have stable economies based on fruits and vegetable products grown locally. In addition, there are small communities located within the region where minority and/or disadvantaged populations have taken up as residences.

3.7.2 Environmental Consequences

No Action Alternative
The No Action Alternative may result in a slight adverse impact to minority or low-income populations in ID4. Without supplemental water, there could be a decrease in farm-related jobs and drinking water, which these communities rely upon.

Proposed Action

Under the Proposed Action, CVP water so delivered to ID4 would primarily serve to help secure the district's water supply. Implementation of the Proposed Action would ensure the viability of water supplies in ID4; therefore, ensuring the viability of farm labor jobs and provide for drinking water to communities within the district. AEWSD would still be left with sufficient water to meet its internal irrigation demand, thus maintaining agriculture as has historically occurred. The unemployment rate near AEWSD suggests that any actions that maintain seasonal jobs should be considered beneficial.

The Proposed Action would not cause dislocation, changes in employment, or increase flood, drought, or disease. The Proposed Action does not propose any features that would result in adverse human health or environmental effects, have any physical effects on minority or low-income populations, and/or alter socioeconomic conditions of populations that reside or work near the Proposed Action. Therefore, there would be no adverse impacts to environmental justice.

3.8 Air Quality

Section 176 (c) of the Clean Air Act (CAA) (42 U.S.C. 7506 (c)) requires that any entity of the Federal government that engages in, supports, or in any way provided financial support for, licenses or permits, or approves any activity to demonstrate that the action conforms to the applicable State Implementation Plan (SIP) required under Section 110 (a) of the CAA (42 U.S.C. 7401 (a)) before the action is otherwise approved. In this context, conformity means that such federal actions must be consistent with a SIP's purpose of eliminating or reducing the severity and number of violations of the National Ambient Air Quality Standards and achieving expeditious attainment of those standards. Each federal agency must determine that any action that is proposed by the agency and that is subject to the regulations implementing the conformity requirements will, in fact conform to the applicable SIP before the action is taken.

On November 30, 1993, the Environmental Protection Agency promulgated final general conformity regulations at 40 CFR 93 Subpart B for all federal activities except those covered under transportation conformity. The general conformity regulations apply to a proposed federal action in a non-attainment or maintenance area if the total of direct and indirect emissions of the relevant criteria pollutants and precursor pollutant caused by the Proposed Action equal or exceed certain *de minimis* amounts thus requiring the federal agency to make a determination of general conformity.

3.8.1 Affected Environment

The project area is located within the San Joaquin Valley Air Basin (SJVAB) which is the second largest air basin in California. Despite years of improvements, the SJVAB does not meet all State and Federal health-based air quality standards. The governing body over the SJVAB, the San Joaquin Valley Air Pollution Control District (SJVAPCD), has adopted stringent control measures to reduce emissions and improve overall air quality within the SJVAB. The following de minimis thresholds for the region covering the project area within the SJVAB are presented in Table 2 below:

Table 2. San Joaquin Valley Attainment Status and Emissions Thresholds for Federal Conformity Determinations			
Pollutant	**Federal Attainment Status[a]**	**(tons/year)[b]**	**(pounds/day)**
Volatile organic compounds (VOC) (as an ozone precursor)	Nonattainment/Serious (8-hour ozone)	50	274
Nitrous oxides (NO_x) (as an ozone precursor)	Attainment/Unclassified	50	274
Particulate matter with a diameter of less than 10 microns (PM_{10})	Attainment	100	548
Carbon monoxide (CO)	Attainment/Unclassified	100	548

[a]SJVAPCD 2009a
[b]40 CFR 93.153

3.8.2 Environmental Consequences

No Action Alternative
Under the No Action Alternative, conditions would remain the same as the existing conditions and impacts to air quality are not anticipated.

Proposed Action
Under the Proposed Action, movement of water between AEWSD and ID4 would be done via gravity flow and/or pumped using electric motors which have no emissions and therefore, a conformity analysis is not required under the CAA.

The Proposed Action would not involve any construction or land disturbing activities that could lead to fugitive dust emissions and/or exhaust emissions associated with the operations of heavy machinery; therefore, there would be no impacts to air quality.

3.9 Cumulative Impacts

As in the past, hydrological conditions and other factors are likely to result in fluctuating water supplies and this drives requests for water service actions. Water districts aim to provide water to their customers based on available water supplies and timing, all while attempting to minimize costs. Farmers irrigate and grow crops based on these conditions and factors, and a myriad of water service actions are approved and executed each year to facilitate water needs. Each water service transaction involving Reclamation undergoes environmental review prior to approval. In addition, the Proposed Action is a temporary approval; therefore, when added to other water service actions, the Proposed Action would not result in cumulative adverse impacts to water resources beyond historical fluctuations and conditions.

The Proposed Action, when added to other similar existing or proposed actions, do not contribute to significant increases or decreases in environmental conditions. The Proposed Action is temporary in nature, and was found to have no impacts on land use, biological resources, cultural resources, ITA, socioeconomic resources, and air quality; therefore, there is no contribution to cumulative impacts on these resources areas.

Slight beneficial impacts to environmental justice and water resources are within the historical variations and would not contribute to cumulative impacts. Overall, there would be no cumulative impacts caused by the Proposed Action.

Section 4 Consultation and Coordination

Several federal laws, permits, licenses and policy requirements have directed, limited or guided the National Environmental Policy Act analysis and decision making process of this EA.

4.1 Fish and Wildlife Coordination Act (16 USC § 651 et seq.)

The Fish and Wildlife Coordination Act (FWCA) requires that Reclamation consult with fish and wildlife agencies (federal and state) on all water development projects that could affect biological resources. The implementation of the Central Valley Project Improvement Act, of which this action is a part, has been jointly analyzed by Reclamation and the USFWS and is being jointly implemented. The Proposed Action would not involve any construction projects; therefore, the FWCA would not apply.

4.2 Endangered Species Act (16 USC § 1531 et seq.)

Section 7 of the ESA requires Federal agencies to ensure that all federally associated activities within the United States do not jeopardize the continued existence of threatened or endangered species or result in the destruction or adverse modification of the critical habitat of these species.

Reclamation has determined that the Proposed Action would have no affect on any Federally listed threatened and endangered species or their critical habitats. This determination is based on conclusions in Section 3.2.2 of this EA and consultation with the USFWS would not be required.

4.3 National Historic Preservation Act (16 USC § 470 et seq.)

The NHPA of 1966, as amended, is the primary Federal legislation that outlines the Federal Governments' responsibility to consider the affects of their actions on historic properties. The 36 CFR Part 800 regulations that implement Section 106 of the NHPA describe how Federal agencies address these effects. Additionally, Native American human remains, cultural objects, and objects of cultural patrimony are protected under the Native American Graves Protection and Repatriation Act of 1990 (25 USC 32) and its implementing regulation outlined at 43 CFR Part 10. The Archaeological Resources Protection Act of 1979 (16 USC 470aa), as amended, and its implementing regulations at 43 CFR 7, protects archaeological resources on Federal land.

The term "cultural resources" is used to describe archaeological sites, illustrating evidence of past human use of the landscape; the built environment, represented by structures such as dams, roadways, and buildings; and traditional resources, including, but not limited to, structures, objects, districts, and sites. A cultural resource that is greater than 50 years old qualifies for consideration as a historic property. Historic properties are defined as those cultural resources listed, or eligible for listing, on the NRHP. The criteria for NRHP eligibility is outlined at 36 CFR Part 60.4.

The Proposed Action involves redistributing water through existing facilities. There would be no modification of water conveyance facilities and no activities that would result in new construction or ground disturbance. There would be no impacts to cultural resources.

4.4 Indian Trust Assets

ITA are legal interests in property held in trust by the U.S. for federally-recognized Indian tribes or individual Indians. An Indian trust has three components: (1) the trustee, (2) the beneficiary, and (3) the trust asset. ITA can include land, minerals, federally-reserved hunting and fishing rights, federally-reserved water rights, and in-stream flows associated with trust land. Beneficiaries of the Indian trust relationship are federally-recognized Indian tribes with trust land; the U.S. is the trustee. By definition, ITA cannot be sold, leased, or otherwise encumbered without approval of the U.S. The characterization and application of the U.S. trust relationship have been defined by case law that interprets Congressional acts, executive orders, and historic treaty provisions.

There are no tribes possessing legal property interests held in trust by the U.S. in the water involved with this action, nor is there such a property interest in the lands designated to receive the water proposed in this action. The Proposed Action would not affect or interfere with the observation of religious or other ceremonies associated with ITA; therefore, there would be no impacts to ITA.

4.5 Migratory Bird Treaty Act (16 USC § 703 et seq.)

The MBTA implements various treaties and conventions between the U.S., Canada, Japan, Mexico, and the former Soviet Union for the protection of migratory birds. Unless permitted by regulations, the MBTA provides that it is unlawful to pursue, hunt, take, capture or kill, possess, offer to or sell, barter, purchase, deliver or cause to be shipped, exported, imported, transported, carried or received any migratory bird, part, nest, egg or product, manufactured or not. Subject to limitations in the MBTA, the Secretary of the Interior may adopt regulations determining the extent to which, if at all, hunting, taking, capturing, killing, possessing, selling, purchasing, shipping, transporting or exporting of any migratory bird, part, nest or egg will be allowed, having regard for temperature zones, distribution, abundance, economic value, breeding habits and migratory flight patterns.

The Proposed Action would not change the land use patterns of the cultivated or fallowed fields that do have some value to listed species of birds protected by the MBTA; therefore, the Proposed Action would have no effect on birds protected by the MBTA.

4.6 Executive Order 11988 – Floodplain Management and Executive Order 11990 – Protection of Wetlands

Executive Order 11988 requires Federal agencies to prepare floodplain assessments for actions located within or affecting flood plains, and similarly, Executive Order 11990 places similar requirements for actions in wetlands.

The Proposed Action would deliver water to ID4 for groundwater recharge and/or urban use and would not affect wetlands and/or floodplains.

4.7 Clean Air Act (42 USC § 176 et seq.)

Section 176 (c) of the CAA (42 USC 7506 (c)) requires that any entity of the Federal government that engages in, supports, or in any way provided financial support for, licenses or permits, or approves any activity to demonstrate that the action conforms to the applicable SIP required under Section 110 (a) of the CAA (42 USC 7401 (a)) before the action is otherwise approved. In this context, conformity means that such federal actions must be consistent with a SIP's purpose of eliminating or reducing the severity and number of violations of the National Ambient Air Quality Standards and achieving expeditious attainment of those standards. Each federal agency must determine that any action that is proposed by the agency and that is subject to the regulations implementing the conformity requirements will, in fact conform to the applicable SIP before the action is taken.

The Proposed Action would not involve any construction or land disturbing activities that could lead to fugitive dust emissions and/or exhaust emissions associated with the operations of heavy machinery. The water would either be conveyed by gravity or pumped via electric motors. The air quality emissions from electrical power have been considered in environmental documentation for the generating power plant. There are no emissions from electrical motors and therefore a conformity analysis is not required under the CAA and there would be no impact on air quality.

4.8 Clean Water Act (16 USC § 703 et seq.)

Section 401

Section 401 of the Clean Water Act (CWA) (33 USC § 1311) prohibits the discharge of any pollutants into navigable waters, except as allowed by permit issued under sections 402 and 404 of the CWA (33 USC § 1342 and 1344). If new structures (e.g., treatment plants) are proposed, that would discharge effluent into navigable waters, relevant permits under the CWA would be required for the project applicant(s). Section 401 requires any applicant for an individual U.S. Army Corps of Engineers (Corps) dredge and fill discharge permit to first obtain certification from the state that the activity associated with dredging or filling would comply with applicable state effluent and water quality standards. This certification must be approved or waived prior to the issuance of a permit for dredging and filling.

No pollutants would be discharged into any navigable waters under the Proposed Action so no permits under Section 401 of the CWA are required.

Section 404

Section 404 of the CWA authorizes the Corps to issue permits to regulate the discharge of "dredged or fill materials into waters of the United States" (33 USC § 1344). No activities such as dredging or filling of wetlands or surface waters would be required for implementation of the Proposed Action, therefore permits obtained in compliance with CWA section 404 are not required.

Section 5 List of Preparers and Reviewers

Bureau of Reclamation

Michael Inthavong, Natural Resources Specialist, SCCAO
Rena Ballew, Contract Repayment Specialist, SCCAO
Rain Healer, Natural Resources Specialist, SCCAO – Reviewer
Jennifer Lewis, Ph.D., Wildlife Biologist, SCCAO
Patricia Rivera, Indian Trust Assets, MP-400
Adam Nickels, Archaeologist, MP-153

Arvin-Edison Water Storage District

Steven C. Collup, P.E., Engineer Manager
Jeevan Muhar, P.E., Staff Engineer

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